Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010001-3

SECRET (When Filled In) #90-406 REVISED

R & D CATALOG FORM

DATE: 4 January 1966

1. PROJECT TITLE/CODE NAME: GEMS Development

2. SHORT PROJECT DESCRIPTION: To further develop a system which will permit an objective and meaningful assessment of the quality of operational reconnaissance photography.

3. LOCATION OF CONTRACTOR

25X1A [redacted] 25X1A [redacted]

5. CLASS OF CONTRACTOR: Manufacturer

6. TYPE OF CONTRACT: CPFF

7. FUNDS: FY 19 $

25X1A FY 1966 [redacted]

FY 1967

8. REQUISITION NO.

9. BUDGET PROJECT NO.: NP-IA-7

10. EFFECTIVE CONTRACT DATE *(Begin - end)*

11. SECURITY CLASS.
A.A. - Confidential
T. - Unclassified
W. - Unclassified

12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION

25X1A DDI/NPIC/P&DS [redacted]

13. REQUIREMENT/AUTHORITY
There is a requirement for an improved technique to objectively evaluate the image quality of the photography produced by each reconnaissance mission.

14. TYPE OF WORK TO BE DONE

Declass Review by NIMA/DOD

Applied Research

15. CATEGORIES OF EFFORT

MAJOR CATEGORY	SUB-CATEGORIES
Image Quality Analysis	

16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC.
1. Technical Reports on: (a) Psychometrical tests; (b) Refinement of existing GEMS Technique; (c) GEMS set specifications; (d) Alternate GEMS Technique; (d) Design and specifications for GEMS Viewer with a cost estimate; and (f) A comprehensive project summary report. (Continued)

17. SUPPORTING OR RELATED CONTRACTS *(Agency & Other)*/COORDINATION

25X1A [redacted] Task #2. "GEMS INVESTIGATION"; Interservice Image Quality Evaluation Committee; Photo working panel [redacted] 25X1A

18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT *(Continue on additional page if required)*
Image quality evaluation is required for every mission. However, to date, the development of an objective standard of judging image quality has not been totally successful. This project is an attempt to develop a workable standard by permitting comparison of the photography to a matrix of GEMS (Graded Estimated Measuring Samples). These GEMS are a series of simulated photographs each with carefully controlled image quality parameters. The probable variables to be (Continued)

19. APPROVED BY AND DATE

OFFICE	DEPUTY DIRECTOR	DDCI

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FORM 2338 SECRET (1-13)

GROUP 1 Excluded from automatic downgrading and declassification

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16.

2. A GEMS Matrix (1000-1500 GEMS) with appropriate documentation.

18.

used are haze and/or exposure, modulation transfer function, granularity, scale factor and scene content. There probably will be between 1000-1500 GEMS in a set. It is anticipated that this technique, if successful, could be developed into a semi-automated image evaluation procedure.

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